H 5

```
FFFFFFFFFFFFFFF          111               111         XXX         XXX
FFFFFFFFFFFFFFF          111               111         XXX         XXX
FFFFFFFFFFFFFFF          111               111         XXX         XXX
FFF                   111111            111111         XXX         XXX
FFF                   111111            111111         XXX         XXX
FFF                   111111            111111         XXX         XXX
FFF                      111               111            XXX   XXX
FFF                      111               111            XXX   XXX
FFF                      111               111            XXX   XXX
FFFFFFFFFFFF             111               111               XXX
FFFFFFFFFFFF             111               111               XXX
FFFFFFFFFFFF             111               111               XXX
FFF                      111               111            XXX   XXX
FFF                      111               111            XXX   XXX
FFF                      111               111            XXX   XXX
FFF                      111               111         XXX         XXX
FFF                      111               111         XXX         XXX
FFF                      111               111         XXX         XXX
FFF                   111111111         111111111      XXX         XXX
FFF                   111111111         111111111      XXX         XXX
FFF                   111111111         111111111      XXX         XXX
```

```
_$25

Symb
----
IOC1
IO_C
IO_C
IO_D
IO_F
IO_S
KILL

KILL
KILL
LB_E
LB_D
LB_F
LB_K
LB_L
LOCA
LOCA
LOCK

LOCK
LOCK
LOCK
LOC_
LOC_
L_CO
L_CO
L_DA
L_DA
MAIN
MAKE
MAKE
MAKE
MAKE
MAKE
MAKE

MAKE
MAKE
MAP_
MAP_

MAP
MARK
MARK
MARK
MARK
MARK
```

```
**FILE**ID**EXTFCB

EEEEEEEEEE  XX      XX  TTTTTTTTTT  FFFFFFFFFF    CCCCCCCC  BBBBBBBB
EEEEEEEEEE  XX      XX  TTTTTTTTTT  FFFFFFFFFF    CCCCCCCC  BBBBBBBB
EE          XX      XX      TT      FF          CC          BB      BB
EE          XX      XX      TT      FF          CC          BB      BB
EE            XX  XX        TT      FF          CC          BB      BB
EE            XX  XX        TT      FF          CC          BB      BB
EEEEEEEE        XX          TT      FFFFFFFF    CC          BBBBBBBB
EEEEEEEE        XX          TT      FFFFFFFF    CC          BBBBBBBB
EE            XX  XX        TT      FF          CC          BB      BB
EE            XX  XX        TT      FF          CC          BB      BB
EE          XX      XX      TT      FF          CC          BB      BB      ....
EE          XX      XX      TT      FF          CC          BB      BB      ....
EEEEEEEEEE  XX      XX      TT      FF            CCCCCCCC  BBBBBBBB        ....
EEEEEEEEEE  XX      XX      TT      FF            CCCCCCCC  BBBBBBBB        ....

LL            IIIIII      SSSSSSSS
LL            IIIIII      SSSSSSSS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II      SS
LL              II        SSSSSS
LL              II        SSSSSS
LL              II              SS
LL              II              SS
LL              II              SS
LL              II              SS
LLLLLLLLLL    IIIIII    SSSSSSSS
LLLLLLLLLL    IIIIII    SSSSSSSS
```

```
EXTH
V04-
```

```
0 MODULE EXTFCB (
0                 LANGUAGE (BLISS32),
0                 IDENT = 'V04-000'
0                 ) =
1 BEGIN
1
1 !
1 !****************************************************************************
1 !*                                                                          *
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1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
1 !*                                                                          *
1 !*                                                                          *
1 !****************************************************************************
1
1 !++
1 !
1 ! FACILITY:  F11ACP Structure Level 2
1 !
1 ! ABSTRACT:
1 !
1 !       This module contains a routine which will build the
1 !       extension fcb chain for the given fcb, if necessary.
1 !
1 ! ENVIRONMENT:
1 !
1 !       VAX/VMS operating system, including privileged system services
1 !       and internal exec routines. This routine must be called in
1 !       kernel mode.
1 !
1 !--
1 !
1 !
1 ! AUTHOR:  Andrew C. Goldstein,  CREATION DATE:  25-Jul-1977  10:55
1 !
1 ! MODIFIED BY:
1 !
1 !       V03-007 CDS0005         Christian D. Saether    29-Aug-1984
1 !               Add optional second argument to BUILD_EXT_FCBS
1 !               to specify primary fcb other than PRIMARY_FCB.
1 !
1 !       V03-006 CDS0004         Christian D. Saether    21-Aug-1984
```

```
;    58          0058  1 !                Update EFBLK after turning back to primary when
;    59          0059  1 !                building extension fcb chain.
;    60          0060  1 !
;    61          0061  1 !        V03-005 CDS0003          Christian D. Saether    14-Aug-1984
;    62          0062  1 !                Replace MAKE_EXTFCB routine with BUILD_EXT_FCBS.
;    63          0063  1 !
;    64          0064  1 !        V03-004 CDS0002          Christian D. Saether    19-Apr-1984
;    65          0065  1 !                Use REFCNT instead of ACNT.
;    66          0066  1 !                Set up FCB$L_LOCKBASIS to be that of primary fcb.
;    67          0067  1 !
;    68          0068  1 !        V03-003 CDS0001          Christian D. Saether    30-Dec-1983
;    69          0069  1 !                Use L_NORM linkage and BIND_COMMON macro.
;    70          0070  1 !
;    71          0071  1 !        V03-002 LMP0059          L. Mark Pilant,         21-Dec-1982  10:51
;    72          0072  1 !                Always create an FCB for a file header accessed.  This
;    73          0073  1 !                eliminates a lot of special casing for FCB handling.
;    74          0074  1 !
;    75          0075  1 !        V03-001 ACG0272          Andrew C. Goldstein,    23-Mar-1982  10:17
;    76          0076  1 !                Clean up use of dummy FCB
;    77          0077  1 !
;    78          0078  1 !        B0102   ACG26369         Andrew C. Goldstein,    28-Dec-1979  15:44
;    79          0079  1 !                Fix multi-header interlock bug
;    80          0080  1 !
;    81          0081  1 !        B0101   ACG0003          Andrew C. Goldstein,  19-Dec-1978  17:40
;    82          0082  1 !        Add multi-volume support
;    83          0083  1 !
;    84          0084  1 !        B0100   ACG00001         Andrew C. Goldstein,  10-Oct-1978  20:00
;    85          0085  1 !        Previous revision history moved to [F11B.SRC]F11B.REV
;    86          0086  1 !**
;    87          0087  1
;    88          0088  1
;    89          0089  1 LIBRARY 'SYS$LIBRARY:LIB.L32';
;    90          0090  1 REQUIRE 'SRC$:FCPDEF.B32';
```

```
1 GLOBAL ROUTINE BUILD_EXT_FCBS (PRIMHDR, PFCB) : L_NORM NOVALUE =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       Build the extension fcb chain starting with the primary
1 !       fcb and header.  Update the size in the primary fcb.  Turn
1 !       the header back when done.
1 !
1 ! SIDE EFFECTS:
1 !       new FCBs created, primary fcb modified
1 !
1 !--
1
2 BEGIN
2
2 MAP
2       PRIMHDR         : REF BBLOCK;   ! file header arg
2
2 BIND_COMMON;
2
2 EXTERNAL ROUTINE
2       CREATE_FCB      : L_NORM,       ! create a new FCB
2       NEXT_HEADER     : L_NORM,
2       READ_HEADER     : L_NORM;
2
2 LOCAL
2       FCB             : REF BBLOCK,
2       PRIMFCB         : REF BBLOCK,
2       NEW_FCB         : REF BBLOCK,
2       HEADER          : REF BBLOCK,
2       NEW_HEADER      : REF BBLOCK;
2
2 IF ACTUALCOUNT EQL 2
2 THEN
3     BEGIN
3     PRIMFCB = .PFCB;
3
3 ! This is a flag for READ_HEADER to tell it not to update FILE_HEADER.
3 ! This prevents it from being set when dealing with directory headers.
3 ! The flag is a one-shot cleared by READ_HEADER (which may be called
3 ! by NEXT_HEADER).
3 !
3     STSFLGS [STS_LEAVE_FILEHDR] = 1;
3     END
2 ELSE
2     PRIMFCB = .PRIMARY_FCB;
2
2 FCB = .PRIMFCB;
2 HEADER = .PRIMHDR;
2
2 UNTIL (NEW_HEADER = NEXT_HEADER (.HEADER, .FCB)) EQL 0
2 DO
3     BEGIN
3     HEADER = .NEW_HEADER;
3
```

```
EXTH
V04-

;
;
;
;
;
;
;
;  -

;

;

; Si
; Ru
; El
; Li
; Le
; Me
; Co
;  149          1138 3      IF ACTUALCOUNT EQL 2
;  150          1139 3      THEN
;  151          1140 3          NEW_FCB = CREATE_FCB (.HEADER, .PRIMFCB)
;  152          1141 3      ELSE
;  153          1142 3          NEW_FCB = CREATE_FCB (.HEADER);
;  154          1143 3
;  155          1144 3      CURRENT_VCB [VCB$W_TRANS] = .CURRENT_VCB [VCB$W_TRANS] + 1;
;  156          1145 3      NEW_FCB [FCB$W_REFCNT] = 1;
;  157          1146 3      NEW_FCB [FCB$L_LOCKBASIS] = .PRIMFCB [FCB$L_LOCKBASIS];
;  158          1147 3      NEW_FCB [FCB$L_STVBN] = .NEW_FCB [FCB$L_STVBN] + .PRIMFCB [FCB$L_FILESIZE];
;  159          1148 3      PRIMFCB [FCB$L_FILESIZE] = .PRIMFCB [FCB$L_FILESIZE]
;  160          1149 3                               + .NEW_FCB [FCB$L_FILESIZE];
;  161          1150 3      FCB [FCB$L_EXFCB] = .NEW_FCB;
;  162          1151 3      FCB = .NEW_FCB;
;  163          1152 3
;  164          1153 3  ! Set it up for the next NEXT_HEADER or the possible READ_HEADER
;  165          1154 3  ! if we drop out of this loop.
;  166          1155 3  !
;  167          1156 3
;  168          1157 3      IF ACTUALCOUNT EQL 2
;  169          1158 3      THEN
;  170          1159 3          STSFLGS [STS_LEAVE_FILEHDR] = 1;
;  171          1160 3
;  172          1161 2      END;
;  173          1162 2
;  174          1163 2  IF .FCB NEQ .PRIMFCB
;  175          1164 2  THEN
;  176          1165 3      BEGIN
;  177          1166 3      HEADER = READ_HEADER (0, .PRIMFCB);
;  178          1167 3
;  179          1168 3      PRIMFCB [FCB$L_EFBLK] = ROT (.BBLOCK[HEADER[FH2$W_RECATTR], FAT$L_EFBLK], 16);
;  180          1169 3
;  181          1170 3      IF   .PRIMFCB [FCB$L_EFBLK] NEQ 0
;  182          1171 3          AND .BBLOCK[HEADER[FH2$W_RECATTR], FAT$W_FFBYTE] EQL 0
;  183          1172 3      THEN
;  184          1173 3          PRIMFCB [FCB$L_EFBLK] = .PRIMFCB [FCB$L_EFBLK] - 1;
;  185          1174 3
;  186          1175 3      IF .PRIMFCB [FCB$L_EFBLK] GTR .PRIMFCB [FCB$L_FILESIZE]
;  187          1176 3      THEN
;  188          1177 3          PRIMFCB [FCB$L_EFBLK] = .PRIMFCB [FCB$L_FILESIZE];
;  189          1178 3
;  190          1179 2      END;
;  191          1180 2
;  192          1181 2  STSFLGS [STS_LEAVE_FILEHDR] = 0;
;  193          1182 2
;  194          1183 1  END;                                        ! end of routine BUILD_EXT_FCBS


                                                        .TITLE  EXTFCB
                                                        .IDENT  \V04-000\

                                                        .EXTRN  CREATE_FCB, NEXT_HEADER
                                                        .EXTRN  READ_HEADER

                                                        .PSECT  $CODE$,NOWRT,2

                                   007C 00000           .ENTRY  BUILD_EXT_FCBS, Save R2,R3,R4,R5,R6          ; 1081
```

**FI

```
               02          6C 91 00002         CMPB    (AP), #2                          ; 1115
                           0A 12 00005         BNEQ    1$                                :
               52    08    AC D0 00007         MOVL    PFCB, PRIMFCB                     ; 1118
            A6 AA          08 88 0000B         BISB2   #8, -90(BASE)                     ; 1125
                           04 11 0000F         BRB     2$                                ; 1115
               52    08    AA D0 00011 1$:     MOVL    8(BASE), PRIMFCB                  ; 1128
               55          52 D0 00015 2$:     MOVL    PRIMFCB, FCB                      ; 1130
               54    04    AC D0 00018         MOVL    PRIMHDR, HEADER                   ; 1131
                           30 BB 0001C 3$:     PUSHR   #^M<R4,R5>                        ; 1133
         0000G CF          02 FB 0001E         CALLS   #2, NEXT_HEADER                   :
               56          50 D0 00023         MOVL    R0, NEW_HEADER                    :
                           49 13 00026         BEQL    6$                                :
               54          56 D0 00028         MOVL    NEW_HEADER, HEADER                ; 1136
               02          6C 91 0002B         CMPB    (AP), #2                          ; 1138
                           0B 12 0002E         BNEQ    4$                                :
                           52 DD 00030         PUSHL   PRIMFCB                           ; 1140
                           54 DD 00032         PUSHL   HEADER                            :
         0000G CF          02 FB 00034         CALLS   #2, CREATE_FCB                    :
                           07 11 00039         BRB     5$                                :
                           54 DD 0003B 4$:     PUSHL   HEADER                            ; 1142
         0000G CF          01 FB 0003D         CALLS   #1, CREATE_FCB                    :
               53          50 D0 00042 5$:     MOVL    R0, NEW_FCB                       :
               50    98    AA D0 00045         MOVL    -104(BASE), R0                    ; 1144
                     0C    A0 B6 00049         INCW    12(R0)                            :
            18 A3          01 B0 0004C         MOVW    #1, 24(NEW_FCB)                   ; 1145
            4C A3    4C    A2 D0 00050         MOVL    76(PRIMFCB), 76(NEW_FCB)          ; 1146
            2C A3    38    A2 C0 00055         ADDL2   56(PRIMFCB), 44(NEW_FCB)          ; 1147
            38 A2    38    A3 C0 0005A         ADDL2   56(NEW_FCB), 56(PRIMFCB)          ; 1149
            0C A5          53 D0 0005F         MOVL    NEW_FCB, 12(FCB)                  ; 1150
               55          53 D0 00063         MOVL    NEW_FCB, FCB                      ; 1151
               02          6C 91 00066         CMPB    (AP), #2                          ; 1157
                           B1 12 00069         BNEQ    3$                                :
            A6 AA          08 88 0006B         BISB2   #8, -90(BASE)                     ; 1159
                           AB 11 0006F         BRB     3$                                ; 1133
               52          55 D1 00071 6$:     CMPL    FCB, PRIMFCB                      ; 1163
                           28 13 00074         BEQL    8$                                :
                           52 DD 00076         PUSHL   PRIMFCB                           ; 1166
                           7E D4 00078         CLRL    -(SP)                             :
         0000G CF          02 FB 0007A         CALLS   #2, READ_HEADER                   :
               54          50 D0 0007F         MOVL    R0, HEADER                        :
3C  A2      1C A4          10 9C 00082         ROTL    #16, 28(HEADER), 60(PRIMFCB)      ; 1168
                           08 13 00088         BEQL    7$                                ; 1170
                     20    A4 B5 0008A         TSTW    32(HEADER)                        ; 1171
                           03 12 0008D         BNEQ    7$                                :
                     3C    A2 D7 0008F         DECL    60(PRIMFCB)                       ; 1173
            38 A2    3C    A2 D1 00092 7$:     CMPL    60(PRIMFCB), 56(PRIMFCB)          ; 1175
                           05 15 00097         BLEQ    8$                                :
            3C A2    38    A2 D0 00099         MOVL    56(PRIMFCB), 60(PRIMFCB)          ; 1177
            A6 AA          08 8A 0009E 8$:     BICB2   #8, -90(BASE)                     ; 1181
                              04 000A2         RET                                       ; 1183

; Routine Size:  163 bytes,    Routine Base:  $CODE$ + 0000


;  195          1184  1
:  196          1185  1 END
:  197          1186  0 ELUDOM
```

```
;                                   PSECT SUMMARY
;
;       Name                      Bytes                        Attributes
;
;  $CODE$                              163  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)




;                            Library Statistics
;
;                                         -------- Symbols --------       Pages       Processing
;       File                              Total    Loaded   Percent       Mapped      Time
;
;  _$255$DUA28:[SYSLIB]LIB.L32;1          18619       27         0        1000          00:02.0




;                                   COMMAND QUALIFIERS
;
;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:EXTFCB/OBJ=OBJ$:EXTFCB MSRC$:EXTFCB/UPDATE=(ENH$:EXTFCB)

; Size:          163 code + 0 data bytes
; Run Time:         00:17.5
; Elapsed Time:     00:30.5
; Lines/CPU Min:     4075
; Lexemes/CPU-Min: 50577
; Memory Used:  218 pages
; Compilation Complete
```

0170 AH-BT13A-SE
VAX/VMS V4.0

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